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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/540,828	03/31/2000	Yuval Ofek	07072-097001	2351

45456 7590 02/17/2005

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EXAMINER	
NGUYEN, MIKE	

ART UNIT	PAPER NUMBER
2182	

DATE MAILED: 02/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/540,828	OFEK ET AL.	
	Examiner	Art Unit	
	Mike Nguyen	2182	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *RCE 12/08/2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-75* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-75* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *31 March 2000* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *12/16/04 & 12/8/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-75 are pending for the examination.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/08/2004 has been entered.

Drawings

3. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1-75 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-31 of copending Application No. 09/539,966. Although the conflicting claims are not identical, they are not

patentably distinct from each other because it would have been obvious to be grouped "a plurality of first directors" and "a plurality of second directors" into "a plurality of first director boards" and "a plurality of second director boards" in the system interface, or the data storage system in order to provide more reliable in transferring data of system interface and to protest against total system failure in the event of a failure in a component or subassembly of the storage system. In addition, it would have been obvious to put "a crossbar switch" in the director boards in order to provide same motivation as above.

6. Claims 1-75 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-14 of copending Application No. 09/540,825. Although the conflicting claims are not identical, they are not patentably distinct from each other because it would have been obvious to be grouped "a plurality of first directors" and "a plurality of second directors" into "a plurality of first director boards" and "a plurality of second director boards" and included "a crossbar switch" in the director boards in order to provide more reliable in transferring data of system interface and to protest against total system failure in the event of a failure in a component or subassembly of the storage system. In addition, it would have been obvious to put "a pair of message network boards having a switching network" in the message network in order to provide same motivation as above.

7. Claims 1-75 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-2, 5-6 and 9-10 of U.S. Patent No. 6,651,130 B1. Although the conflicting claims are not identical, they are not patentably distinct from each other because it would have been obvious to include "a common bus, such as interconnecting the data

pipe, the microprocessor, and the controller" in order to provide more reliable in transferring data of system interface and to protest against total system failure in the event of a failure in a component or subassembly of the storage system.

8. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 1-75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Martin et al. (U.S. Pat. No. 5,214,768) in view of Gaskins (U.S. Pat. No. 5,903,911).

As to claim 1, Martin teaches a system interface comprising:

a plurality of first directors (see figure 1 elements 14, 16, 18, 19 and column 5 lines 20-30);

a plurality of second directors (see figure 1 element 48 and column 5 lines 49-58);

a data transfer section coupled to the plurality of first and second directors (see figure 2 element 42 and column 7 lines 25-34 and column 14 lines 4-18);

a message network coupled to the plurality of first directors and the plurality of second directors (see figure 2 element 42 and column 7 lines 25-34 and column 14 lines 4-18); and

Although the system interface taught by Martin shows substantial features of the claimed invention (discussed above), it fails to explicitly teach: a cache memory, the message network

operative independently of the data transfer section, and wherein the first and second directors control data transfer between the first directors and the second directors in response to messages passing between the first directors and the second directors through the message network to facilitate data transfer between first directors and the second directors with such data passing through the cache memory in the data transfer section. Gaskins; however, teaches a cache memory (see figure 2 element 206), the message network operative independently of the data transfer section (see figure 2 element 208), and wherein the first and second directors control data transfer between the first directors and the second directors in response to messages passing between the first directors and the second directors through the message network to facilitate data transfer between first directors and the second directors with such data passing through the cache memory in the data transfer section (see figures 3, 4 and column 9 lines 10-65). Given the teaching of Gaskins, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Martin by employing the well known or conventional feature of the system interface, such as taught by Gaskins, in order to provide increasing the bandwidth of the data transfer section (see column 4 lines 39-52).

As to claim 2, Martin teaches the system interface recited in claim 1 wherein each one of the first directors includes:

a data pipe coupled between an input of such one of the first directors and the cache memory (see figure 3 and column 10 lines 56-62);

Although the system interface taught by Martin shows substantial features of the claimed invention (discussed above), it fails to explicitly teach: a controller. Gaskins; however, teaches a

controller for transferring the messages between the message network and such one of the first directors (see column 9 lines 12-14, 41-43). Given the teaching of Gaskins, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Martin by employing the well known or conventional feature of the system interface, such as taught by Gaskins, in order to provide increasing the bandwidth of the data transfer section (see column 4 lines 39-52).

As to claims 3 and 4, Martin teaches the system interface wherein each one of the second directors includes:

a data pipe coupled between an input of such one of the second directors and the cache memory (see figure 8 element 316 and column 15 lines 62-66);

Although the system interface taught by Martin shows substantial features of the claimed invention (discussed above), it fails to explicitly teach: a controller. Gaskins; however, teaches a controller for transferring the messages between the message network and such one of the second directors (see column 9 lines 21-30, 45-65). Given the teaching of Gaskins, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Martin by employing the well known or conventional feature of the system interface, such as taught by Gaskins, in order to provide increasing the bandwidth of the data transfer section (see column 4 lines 39-52).

As to claim 5, Martin teaches the system interface recited in claim 1 wherein each one of the first directors includes:

a data pipe coupled between an input of such one of the first directors and the cache memory (see figure 3 and column 10 lines 56-62);

a microprocessor (see figure 3 elements 124, 126, 128); and

Although the system interface taught by Martin shows substantial features of the claimed invention (discussed above), it fails to explicitly teach: a controller. Gaskins; however, teaches a controller coupled to the microprocessor and the data pipe for controlling the transfer of the messages between the message network and such one of the first directors and for controlling the data between the input of such one of the first directors and the cache memory (see column 9 lines 12-30, 41-65). Given the teaching of Gaskins, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Martin by employing the well known or conventional feature of the system interface, such as taught by Gaskins, in order to provide increasing the bandwidth of the data transfer section (see column 4 lines 39-52).

As to claims 6 and 7, Martin teaches the system interface wherein each one of the second directors includes:

a data pipe coupled between an input of such one of the second directors and the cache memory (see figure 8 element 316 and column 15 lines 62-66);

a microprocessor (see figure 3 elements 124, 126, 128); and

Although the system interface taught by Martin shows substantial features of the claimed invention (discussed above), it fails to explicitly teach: a controller. Gaskins; however, teaches a controller coupled to the microprocessor and the data pipe for controlling the transfer of the

messages between the message network and such one of the second directors and for controlling the data between the input of such one of the second directors and the cache memory (see column 9 lines 12-30, 41-65). Given the teaching of Gaskins, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Martin by employing the well known or conventional feature of the system interface, such as taught by Gaskins, in order to provide increasing the bandwidth of the data transfer section (see column 4 lines 39-52).

Claim 8 is of similar scope as claim 1 and is therefore rejected under same rationale. Martin also teaches a data storage system for transferring data between a host computer/server and a bank of disk drives through a system interface (see figure 1 elements 12, 44).

Claims 9-14 are of similar scope as claims 2-7 and are therefore rejected under same rationale.

As to claim 15, Martin teaches a method for operating a data storage system adapted to transfer data between a host computer/server and a bank of disk drives (see figure 1 elements 12, 44).

Although the system interface taught by Martin shows substantial features of the claimed invention (discussed above), it fails to explicitly teach: transferring messages through a messaging network with the data being transferred between the host computer/server and the bank of disk drives through a cache memory, such message network being independent of the

cache memory. Gaskins; however, teaches transferring messages through a messaging network with the data being transferred between the host computer/server and the bank of disk drives through a cache memory, such message network being independent of the cache memory (see figure 2 elements 206, 208 and figures 3, 4 and column 9 lines 10-65). Given the teaching of Gaskins, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Martin by employing the well known or conventional feature of the system interface, such as taught by Gaskins, in order to provide increasing the bandwidth of the data transfer section (see column 4 lines 39-52).

Claims 16 and 17 are directed to a method of operating a system interface implementing the system interface of claim 8. Since Martin and Gaskins teach the system interface as set forth in claim 8 therefore they also teach the method as set forth in claims 16 and 17.

Claims 18-23 are directed to a method of operating a system interface implementing the system interface of claims 2-7. Since Martin and Gaskins teach the system interface as set forth in claims 2-7 therefore they also teach the method as set forth in claims 18-23.

As claims to 24, 27, 29 and 37, Martin teaches the system interface wherein the messaging network comprises a switch network having a plurality ports, each one of the ports being coupled to corresponding one of the plurality of first and second directors (see figures 2A element 42 and figure 7 and column 13 line 49 to column 14 line 36).

As to claim 25, Martin teaches a system interface comprising:

a plurality of first directors (see figure 1 elements 14, 16, 18, 19 and column 5 lines 20-30);

a plurality of second directors (see figure 1 element 56 and column 5 lines 53-58);

a data transfer section coupled to the plurality of first and second directors (see figure 2 element 42 and column 7 lines 25-34 and column 14 lines 4-18);

a message network comprising a switch network having a plurality of ports, each one of the ports being coupled to corresponding one of the plurality of first directors and second directors (see figures 2A element 42 and figure 7 and column 13 line 49 to column 14 line 36); and

Although the system interface taught by Martin shows substantial features of the claimed invention (discussed above), it fails to explicitly teach: a cache memory, the message network operative independently of the data transfer section, and wherein the first and second directors control data transfer between the first directors and the second directors in response to messages passing between the first directors and the second directors through the message network with such messages by-passing the data transfer section and with such data transfer comprising passing data through the directors to the cache memory in the data transfer section. Gaskins; however, teaches a cache memory (see figure 2 element 206), the message network operative independently of the data transfer section (see figure 2 element 208), and wherein the first and second directors control data transfer between the first directors and the second directors in response to messages passing between the first directors and the second directors through the message network with such messages by-passing the data transfer section and with such data

transfer comprising passing data through the directors to the cache memory in the data transfer section (see figures 3, 4 and column 9 lines 10-65). Given the teaching of Gaskins, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Martin by employing the well known or conventional feature of the system interface, such as taught by Gaskins, in order to provide increasing the bandwidth of the data transfer section (see column 4 lines 39-52).

Claims 26, 28 and 30 are of similar scope as claim 25 and are therefore rejected under same rationale.

As claim 27, Martin teaches the system interface recited in claim 26 wherein the message network comprises a switch network having a plurality of ports, each one of the ports being coupled to corresponding one of the plurality of first directors and second directors (see figures 2A, 8 element 88 and column 7 lines 35-62 and column 14 lines 56-68 and column 15 lines 1-15).

As claim 31, Martin teaches a system interface comprising:

a plurality of directors (see figure 1 elements 14, 16, 18, 19, 48 and column 5 lines 20-30, 49-58);

a data transfer section coupled to the plurality of directors (see figure 2 element 42 and column 7 lines 25-34 and column 14 lines 4-18);

a message network coupled to the plurality of directors (see figures 5, 6 and column 14 lines 37-45 and figure 2 element 42 and column 7 lines 25-34 and column 14 lines 4-18); and

Although the system interface taught by Martin shows substantial features of the claimed invention (discussed above), it fails to explicitly teach: a cache memory, the message network operative independently of the data transfer section, and wherein the directors control data transfer in response to messages passing between the directors through the messaging network with such data passing through the cache memory. Gaskins; however, teaches a cache memory (see figure 2 element 206), the message network operative independently of the data transfer section (see figure 2 element 208), and wherein the directors control data transfer in response to messages passing between the directors through the messaging network with such data passing through the cache memory (see figures 3, 4 and column 9 lines 10-65). Given the teaching of Gaskins, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Martin by employing the well known or conventional feature of the system interface, such as taught by Gaskins, in order to provide increasing the bandwidth of the data transfer section (see column 4 lines 39-52).

As to claims 32, 34 and 38, Martin teaches the system interface wherein each one of the directors includes:

a data pipe coupled between an input of such one of the directors and the cache memory (see figure 3 and column 10 lines 56-62 and figure 8 element 316 and column 15 lines 62-66); and

Although the system interface taught by Martin shows substantial features of the claimed invention (discussed above), it fails to explicitly teach: a controller. Gaskins; however, teaches a controller for transferring the messages between the message network and such one of the directors (see column 9 lines 12-14, 21-30, 41-65). Given the teaching of Gaskins, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Martin by employing the well known or conventional feature of the system interface, such as taught by Gaskins, in order to provide increasing the bandwidth of the data transfer section (see column 4 lines 39-52).

As to claims 33, 41, 45, 47 and 51, Martin teaches the system interface recited in claim 31 wherein the messaging network comprises a switch network having a plurality of ports, each one of the ports being coupled to corresponding one of the plurality of directors (see figures 2A element 42 and figure 7 and column 13 line 49 to column 14 line 36).

Claim 35 is of similar scope as claim 1 and is therefore rejected under same rationale. Martin also teaches a data storage system for transferring data between a host computer/server and a bank of disk drives through a system interface (see figure 1 elements 12, 42, 56).

Claim 36 is of similar scope as claim 2 and is therefore rejected under same rationale.

Claims 39-40 and 42 are of similar scope as claims 31-30 and 34 and are therefore rejected under same rationale.

As to claim 43, Martin teaches a system interface comprising:

a plurality of directors (see figure 1 elements 14, 16, 18, 19, 48 and column 5 lines 20-30, 49-58);

a data transfer section coupled to the plurality of directors (see figure 2 element 42 and column 7 lines 25-34 and column 14 lines 4-18);

a message network comprising a switch network having a plurality of ports, each one of the ports being coupled to corresponding one of the plurality of directors (see figures 2A element 42 and figure 7 and column 13 line 49 to column 14 line 36); and

Although the system interface taught by Martin shows substantial features of the claimed invention (discussed above), it fails to explicitly teach: a cache memory, the message network operative independently of the data transfer section, and wherein the directors control data transfer in response to messages passing between the directors through the messaging network with such data passing through the cache memory. Gaskins; however, teaches a cache memory (see figure 2 element 206), the message network operative independently of the data transfer section (see figure 2 element 208), and wherein the directors control data transfer in response to messages passing between the directors through the messaging network with such data passing through the cache memory (see figures 3, 4 and column 9 lines 10-65). Given the teaching of Gaskins, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Martin by employing the well known or conventional feature of the system interface, such as taught by Gaskins, in order to provide increasing the bandwidth of the data transfer section (see column 4 lines 39-52).

As to claim 44, Martin teaches a system interface comprising:

a plurality of directors (see figure 1 elements 14, 16, 18, 19, 48 and column 5 lines 20-30, 49-58);

a data transfer section coupled to the plurality of directors (see figure 2 element 42 and column 7 lines 25-34 and column 14 lines 4-18);

a message network coupled to the plurality of directors (see figures 2A element 42 and figure 7 and column 13 line 49 to column 14 line 36); and

Although the system interface taught by Martin shows substantial features of the claimed invention (discussed above), it fails to explicitly teach: a cache memory, the message network operative independently of the data transfer section, and wherein the directors control data transfer in response to messages passing between the directors through the messaging network with such messages by-passing the data transfer section and with such data transfer comprising passing data through the directors to the cache memory in the data transfer section. Gaskins; however, teaches a cache memory (see figure 2 element 206), the message network operative independently of the data transfer section (see figure 2 element 208), and wherein the directors control data transfer in response to messages passing between the directors through the messaging network with such messages by-passing the data transfer section and with such data transfer comprising passing data through the directors to the cache memory in the data transfer section (see figures 3, 4 and column 9 lines 10-65). Given the teaching of Gaskins, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Martin by employing the well known or conventional feature of the system interface,

such as taught by Gaskins, in order to provide increasing the bandwidth of the data transfer section (see column 4 lines 39-52).

Claim 46 is of similar scope as claim 44 and is therefore rejected under same rationale.

Claim 48 is of similar scope as claim 43 and is therefore rejected under same rationale.

Claims 49-50 and 52 are of similar scope as claims 31-32 and 34 and are therefore rejected under same rationale.

Claims 53-56 are of similar scope as claims 35-38 and are therefore rejected under same rationale.

As to claim 57, Martin teaches a system, comprising:

a first director (see figure 1 elements 14, 16, 18, 19 and column 5 lines 20-30);

a second director (see figure 1 element 48 and column 5 lines 49-58);

a messaging network coupled to the first director and the second director (see figure 2 element 42 and column 7 lines 25-34 and column 14 lines 4-18); and

Although the system interface taught by Martin shows substantial features of the claimed invention (discussed above), it fails to explicitly teach: a cache memory, and wherein the first and second directors with data in such data transfer passing through the cache memory in response to messages passing between the first directors and the second directors through the

messaging network; and wherein the messages passing through the message network by-pass the cache memory. Gaskins; however, teaches a cache memory (see figure 2 element 206), and wherein the first and second directors with data in such data transfer passing through the cache memory in response to messages passing between the first directors and the second directors through the messaging network; and wherein the messages passing through the message network by-pass the cache memory (see figures 3, 4 and column 9 lines 10-65). Given the teaching of Gaskins, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Martin by employing the well known or conventional feature of the system interface, such as taught by Gaskins, in order to provide increasing the bandwidth of the data transfer section (see column 4 lines 39-52).

As to claim 58, Martin teaches a system, comprising:

a first director (see figure 1 elements 14, 16, 18, 19 and column 5 lines 20-30);

a second director (see figure 1 element 48 and column 5 lines 49-58);

a messaging network coupled to the first director and the second director (see figure 2 element 42 and column 7 lines 25-34 and column 14 lines 4-18); and

Although the system interface taught by Martin shows substantial features of the claimed invention (discussed above), it fails to explicitly teach: a cache memory, wherein the first and second directors with data in such data transfer passing through the cache memory in response to messages passing between the first directors and the second directors through the messaging network, and wherein each one of the messages includes a destination field. Gaskins; however, teaches a cache memory (see figure 2 element 206), wherein the first and second directors with

data in such data transfer passing through the cache memory in response to messages passing between the first directors and the second directors through the messaging network (see figures 3, 4 and column 9 lines 10-65), and wherein each one of the messages includes a destination field (see column 7 lines 66-67). Given the teaching of Gaskins, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Martin by employing the well known or conventional feature of the system interface, such as taught by Gaskins, in order to provide increasing the bandwidth of the data transfer section (see column 4 lines 39-52).

Claim 59 is of similar scope as claim 57 and is therefore rejected under same rationale. Martin also teaches a data storage system for transferring data between a host computer/server and a bank of disk drives through a system interface (see figure 1 elements 12, 42, 56).

Claim 60 is of similar scope as claim 58 and is therefore rejected under same rationale. Martin also teaches a data storage system for transferring data between a host computer/server and a bank of disk drives through a system interface (see figure 1 elements 12, 42, 56). Gaskins also teaches each one of the messages includes a destination field (see column 7 lines 66-67).

As to claim 61, Martin teaches a system, comprising:

a plurality of first directors (see figure 1 elements 14, 16, 18, 19 and column 5 lines 20-30);

a plurality of second directors (see figure 1 element 48 and column 5 lines 49-58);

a messaging network, coupled to the plurality of first directors and the plurality of second directors (see figure 2 element 42 and column 7 lines 25-34 and column 14 lines 4-18); and

Although the system interface taught by Martin shows substantial features of the claimed invention (discussed above), it fails to explicitly teach: a cache memory, and wherein the cache memory is coupled the plurality of first directors and to the plurality of second directors; wherein data is transferred between first directors and the second directors through the cache memory in response to messages passing between the first directors and the second directors through the messaging network; and wherein the messages passing through the message network by-pass the cache memory. Gaskins; however, teaches a cache memory (see figure 2 element 206), and wherein the first and second directors with data in such data transfer passing through the cache memory in response to messages passing between the first directors and the second directors through the messaging network; and wherein the messages passing through the message network by-pass the cache memory (see figures 3, 4 and column 9 lines 10-65). Given the teaching of Gaskins, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Martin by employing the well known or conventional feature of the system interface, such as taught by Gaskins, in order to provide increasing the bandwidth of the data transfer section (see column 4 lines 39-52).

As to claims 62, 65, 68, 70, 71 and 74, Gaskins teaches the system wherein the each one of the messages comprises a packet, such packet having a destination field (see column 7 lines 66-67).

Claim 63 is of similar scope as claims 61-62 is therefore rejected under same rationale.

Claim 64 is of similar scope as claim 57 is therefore rejected under same rationale.

Claim 66 is of similar scope as claim 58 is therefore rejected under same rationale.

As to claim 67, Martin teaches system, comprising:

a plurality of directors (see figure 1 elements 14, 16, 18, 19, 48 and column 5 lines 20-30, 49-58);

a messaging network coupled to the message ports of the plurality of directors (see figures 2A element 42 and figure 7 and column 13 line 49 to column 14 line 36);

Although the system interface taught by Martin shows substantial features of the claimed invention (discussed above), it fails to explicitly teach: each one of directors having a data port for data and a separate message port for messages; a cache memory coupled to the data ports of the plurality of directors; wherein the plurality of directors control data transfer between the directors with said data in such data transfer passing through the cache memory in response to said messages passing between the directors through the messaging network; and wherein the messages passing through the message network by-pass the cache memory. Gaskins; however, teaches each one of directors having a data port for data and a separate message port for messages (see figure 2 and column 7 lines 5-14); a cache memory coupled to the data ports of the plurality of directors (see figure 2 element 206), and wherein the first and second directors with data in such data transfer passing through the cache memory in response to messages passing

between the first directors and the second directors through the messaging network; and wherein the messages passing through the message network by-pass the cache memory (see figures 3, 4 and column 9 lines 10-65). Given the teaching of Gaskins, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Martin by employing the well known or conventional feature of the system interface, such as taught by Gaskins, in order to provide increasing the bandwidth of the data transfer section (see column 4 lines 39-52).

Claim 69 is of similar scope as claim 67 and is therefore rejected under same rationale.

As to claims 72 and 75, Martin teaches a system, comprising:

a plurality of directors (see figure 1 elements 14, 16, 18, 19, 48 and column 5 lines 20-30, 49-58);

a messaging network coupled to the message ports of the plurality of directors (see figures 2A element 42 and figure 7 and column 13 line 49 to column 14 line 36);

Although the system interface taught by Martin shows substantial features of the claimed invention (discussed above), it fails to explicitly teach: each one of directors having message port for messages; a cache memory; and wherein the plurality of directors control data transfer in response to said messages passing between the directors, each one of said messages including a destination field. Gaskins; however, teaches each one of directors having message port for messages (see figure 2 and column 7 lines 5-14); a cache memory (see figure 2 element 206), and wherein the plurality of directors control data transfer in response to said messages passing

between the directors (see figures 3, 4 and column 9 lines 10-65), each one of said messages including a destination field (see column 7 lines 66-67). Given the teaching of Gaskins, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Martin by employing the well known or conventional feature of the system interface, such as taught by Gaskins, in order to provide increasing the bandwidth of the data transfer section (see column 4 lines 39-52).

As to claim 73, Martin teaches a system, comprising:

a plurality of directors (see figure 1 elements 14, 16, 18, 19, 48 and column 5 lines 20-30, 49-58);

a messaging network coupled to the message ports of the plurality of directors (see figures 2A element 42 and figure 7 and column 13 line 49 to column 14 line 36);

Although the system interface taught by Martin shows substantial features of the claimed invention (discussed above), it fails to explicitly teach: each one of directors having message port for messages; a cache memory in communication with the plurality of directors; and wherein the plurality of directors control data transfer between the directors with said data in such data transfer passing through the cache memory in response to said messages passing between the directors through the messaging network, and wherein the messages passing through the message network by-pass the cache memory. Gaskins; however, teaches each one of directors having message port for messages (see figure 2 and column 7 lines 5-14); a cache memory in communication with the plurality of directors (see figure 2 element 206), and wherein the plurality of directors control data transfer between the directors with said data in such data

transfer passing through the cache memory in response to said messages passing between the directors through the messaging network, and wherein the messages passing through the message network by-pass the cache memory (see figures 3, 4 and column 9 lines 10-65). Given the teaching of Gaskins, a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Martin by employing the well known or conventional feature of the system interface, such as taught by Gaskins, in order to provide increasing the bandwidth of the data transfer section (see column 4 lines 39-52).

Response to Amendment

11. In response to the applicant's arguments that "cache controller 208 of Gaskins does not pass messages between the directors through it". Examiner disagrees, in column 7 lines 15-22 and figs 2-4 column 7 lines 30-38 and column 9 lines 10-65, clearly indicates that the cache controller 208 couples between a multi-processor (or first directors) and variety of peripherals (or second directors) because the computer system 200 (in fig. 2) may be adapted to the multi-processor and the variety of peripherals. Also, the cache controller 208 is used to pass read/write request signals (messages) between multiprocessor and the variety peripherals but cache memory 206 is used to store read/write data.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Nguyen whose telephone number is 571 272-4153. The examiner can normally be reached on 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be reached on 571 272-4146. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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02/11/2005